

TRANSMITTAL LETTER TO THE UNITED STATES
DESIGNATED/ELECTED OFFICE (DO/EO/US)
CONCERNING A FILING UNDER 35 U.S.C. 371

0104-0345P

U.S. APPLICATION NO. (If known, see 37 CFR 1.5)

09/856972

INTERNATIONAL APPLICATION NO.

PCT/SE98/02183

INTERNATIONAL FILING DATE

November 30, 1998

PRIORITY DATE CLAIMED

None

TITLE OF INVENTION

METHOD FOR INSERTING OBJECTS INTO A WORKING AREA IN A COMPUTER APPLICATION

APPLICANT(S) FOR DO/EO/US

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Applicant herewith submits to the United States Designated/Elected Office (DO/EO/US) the following items and other information:

1. ☒ This is a **FIRST** submission of items concerning a filing under 35 U.S.C. 371.
2. ☐ This is a **SECOND** or **SUBSEQUENT** submission of items concerning a filing under 35 U.S.C. 371.
3. ☒ This express request to begin national examination procedures (35 U.S.C. 371(f)) at any time rather than delay examination until the expiration of the applicable time limit set in 35 U.S.C. 371(b) and PCT Articles 22 and 39 (1).
4. ☐ The US has been elected by the expiration of 19 months from the priority date (Article 31).
5. ☒ A copy of the International Application as filed (35 U.S.C. 371(c)(2))
 - a. ☒ is transmitted herewith (required only if not transmitted by the International Bureau). WO 98/06219
 - b. ☐ has been transmitted by the International Bureau.
 - c. ☐ is not required, as the application was filed in the United States Receiving Office (RO/US).
6. ☒ An English language translation of the International Application as filed (35 U.S.C. 371(c)(2)).
 - a. ☒ is transmitted herewith.
 - b. ☐ has been previously submitted under 35 U.S.C. 154(d)(4)
7. ☒ Amendments to the claims of the International Application under PCT Article 19 (35 U.S.C. 371(c)(3)).
 - a. ☐ are transmitted herewith (required only if not transmitted by the International Bureau).
 - b. ☐ have been transmitted by the International Bureau.
 - c. ☐ have not been made; however, the time limit for making such amendments has NOT expired.
 - d. ☒ have not been made and will not be made.
8. ☐ An English language translation of the amendments to the claims under PCT Article 19 (35 U.S.C. 371(c)(3)).
9. ☐ An oath or declaration of the inventor(s) (35 U.S.C. 371(c)(4)).
10. ☐ An English language translation of the annexes of the International Preliminary Examination Report under PCT Article 36 (35 U.S.C. 371(c)(5)).

Items 11. to 20. below concern document(s) or information included:

11. ☒ An Information Disclosure Statement under 37 CFR 1.97 and 1.98.- 1449 and International Search Report (PCT/ISA/210) w/ 6 references
12. ☐ An assignment document for recording. A separate cover sheet in compliance with 37 CFR 3.28 and 3.31 is included.
13. ☒ A **FIRST** preliminary amendment.
14. ☐ A **SECOND** or **SUBSEQUENT** preliminary amendment.
15. ☐ A substitute specification.
16. ☐ A change of power of attorney and/or address letter.
17. ☐ A computer-readable form of the sequence listing in accordance with PCT Rule 13ter.2 and 35 U.S.C. 1.821-1.825.
18. ☐ A second copy of the published international application under 35 U.S.C. 154(d)(4).
19. ☐ A second copy of the English language translation of the international application under 35 U.S.C. 154(d)(4).
20. ☒ Other items or information:
 - 1.) Int'l Preliminary Exam Rpt. (PCT/IPEA/409)
 - 2.) FIVE (5) sheets Formal Drawings
 - 3.) Substitute Claims Letter

30 MAY 2001

U.S. APPLICATION NO. if known, see 37 CFR 1.5)		INTERNATIONAL APPLICATION NO.		ATTORNEY'S DOCKET NUMBER	
NEW 09/856972		PCT/SE98/02183		0104-0345P	

<p>21. <input checked="" type="checkbox"/> The following fees are submitted:</p> <p>BASIC NATIONAL FEE (37 CFR 1.492(a)(1)-(5): Neither international preliminary examination fee (37 CFR 1.482) nor international search fee (37 CFR 1.445(a)(2)) paid to USPTO and International Search Report not prepared by the EPO or JPO. \$1,000.00</p> <p>International preliminary examination fee (37 CFR 1.482) not paid to USPTO but International Search Report prepared by the EPO or JPO \$860.00</p> <p>International preliminary examination fee (37 CFR 1.482) not paid to USPTO but international search fee (37 CFR 1.445(a)(2)) paid to USPTO. \$710.00</p> <p>International preliminary examination fee (37 CFR 1.482) paid to USPTO but all claims did not satisfy provisions of PCT Article 33(1)-(4) \$690.00</p> <p>International preliminary examination fee (37 CFR 1.482) paid to USPTO and all claims satisfied provisions of PCT Article 33(1)-(4). \$100.00</p> <p style="text-align: center;">ENTER APPROPRIATE BASIC FEE AMOUNT =</p> <p>Surcharge of \$130.00 for furnishing the oath or declaration later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(e)).</p> <table border="1" style="width:100%; border-collapse: collapse; font-size: small;"> <tr> <th>CLAIMS</th> <th>NUMBER FILED</th> <th>NUMBER EXTRA</th> <th>RATE</th> </tr> <tr> <td>Total Claims</td> <td>11 - 20 =</td> <td>0</td> <td>X \$18.00</td> </tr> <tr> <td>Independent Claims</td> <td>1 - 3 =</td> <td>0</td> <td>X \$80.00</td> </tr> <tr> <td colspan="3">MULTIPLE DEPENDENT CLAIM(S) (if applicable) None</td> <td>+ \$270.00</td> </tr> </table> <p style="text-align: right;">TOTAL OF ABOVE CALCULATIONS =</p> <p><input type="checkbox"/> Applicant claims small entity status. See 37 CFR 1.27. The fees indicated above are reduced by 1/2.</p> <p style="text-align: right;">SUBTOTAL =</p> <p>Processing fee of \$130.00 for furnishing the English translation later than <input type="checkbox"/> 20 <input type="checkbox"/> 30 months from the earliest claimed priority date (37 CFR 1.492(f)).</p> <p style="text-align: right;">TOTAL NATIONAL FEE =</p> <p>Fee for recording the enclosed assignment (37 CFR 1.21(h)). The assignment must be accompanied by an appropriate cover sheet (37 CFR 3.28, 3.31). \$40.00 per property +</p> <p style="text-align: right;">TOTAL FEES ENCLOSED =</p>	CLAIMS	NUMBER FILED	NUMBER EXTRA	RATE	Total Claims	11 - 20 =	0	X \$18.00	Independent Claims	1 - 3 =	0	X \$80.00	MULTIPLE DEPENDENT CLAIM(S) (if applicable) None			+ \$270.00	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <th style="font-size: small;">CALCULATIONS</th> <th style="font-size: small;">PTO USE ONLY</th> </tr> <tr> <td style="height: 150px;"></td> <td></td> </tr> <tr> <td>\$ 1,000.00</td> <td></td> </tr> <tr> <td>\$ 0</td> <td></td> </tr> <tr> <td>\$ 0</td> <td></td> </tr> <tr> <td>\$ 0</td> <td></td> </tr> <tr> <td>\$ 1,000.00</td> <td></td> </tr> <tr> <td>\$ 0</td> <td></td> </tr> <tr> <td>\$ 1,000.00</td> <td></td> </tr> <tr> <td>\$ 0</td> <td></td> </tr> <tr> <td>\$ 1,000.00</td> <td></td> </tr> <tr> <td>\$ 0</td> <td></td> </tr> <tr> <td>\$ 1,000.00</td> <td></td> </tr> <tr> <td>Amount to be: refunded</td> <td>\$</td> </tr> <tr> <td>charged</td> <td>\$</td> </tr> </table>	CALCULATIONS	PTO USE ONLY			\$ 1,000.00		\$ 0		\$ 0		\$ 0		\$ 1,000.00		\$ 0		\$ 1,000.00		\$ 0		\$ 1,000.00		\$ 0		\$ 1,000.00		Amount to be: refunded	\$	charged	\$
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a. ☒ A check in the amount of \$ 1,000.00 to cover the above fees is enclosed.


b. ☐ Please charge my Deposit Account. No. _____ in the amount of \$ _____ to cover the above fees.
 A duplicate copy of this sheet is enclosed.

c. ☒ The Commissioner is hereby authorized to charge any additional fees which may be required, or credit any
 overpayment to Deposit Account No. 02-2448.

NOTE: Where an appropriate time limit under 37 CFR 1.494 or 1.495 has not been met, a petition to revive (37 CFR
 1.137(a) or (b)) must be filed and granted to restore the application to pending status.

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Date: May 30, 2001

By 
 John A. Castellano, #35,094

09/856972

531 Rec'd PCT

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PATENT

0104-0345P

IN THE U.S. PATENT AND TRADEMARK OFFICE

Applicant: TERNULF, Yngve et al Conf.:
Appl. No.: NEW Group:
Filed: May 30, 2001 Examiner:
For: METHOD FOR INSERTING OBJECTS INTO A
WORKING AREA IN A COMPUTER APPLICATION

PRELIMINARY AMENDMENT

Assistant Commissioner for Patents
Washington, DC 20231

May 30, 2001

Sir:

The following preliminary amendments and remarks are respectfully submitted in connection with the above-identified application.

IN THE SPECIFICATION:

Please amend the specification as follows:

Before line 1, insert --This application is the national phase under 35 U.S.C. § 371 of PCT International Application No. PCT/SE98/02183 which has an International filing date of November 30, 1998, which designated the United States of America and was not published in English.--

IN THE CLAIMS:

Please amend the claims as follows:

4. (Amended) Method according to claim 1, wherein input (9) from the user is received using a pointing device (5).

7. (Amended) Method according to claim 4, wherein the step of indicating (34; 46) an object type in association with each subarea comprises displaying a symbol (26a-d) representing said object type in connection to said subarea.

8. (Amended) Method according to claim 5, wherein the step of indicating (46) an object type in association with each subarea (23' ; 23'') comprises changing the appearance of the cursor (28).

9. (Amended) Method according to claim 1, wherein the object types represent various physical items that are inserted into the working area to create said network.

11. (Amended) Computer-readable medium, on which is stored instructions for one or several general purpose computers (2), comprising means (15, 16, 18, 19) for enabling said one or said

several computers (2) to perform the steps of the method according to claim 1,

REMARKS

The claims have been amended to delete the improper multiple dependencies in order to place the application into better form prior to examination.

Entry of the above amendments is earnestly solicited. An early and favorable first action on the merits is earnestly solicited.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By 
John A. Castellano, #35,094

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Attachments

VERSION WITH MARKINGS TO SHOW CHANGES MADEIN THE CLAIMS:

4. (Amended) Method according to [claim 1-3] claim 1, wherein input (9) from the user is received using a pointing device (5).

7. (Amended) Method according to [claim 4-6] claim 4, wherein the step of indicating (34; 46) an object type in association with each subarea comprises displaying a symbol (26a-d) representing said object type in connection to said subarea.

8. (Amended) Method according to [claim 5-7] claim 5, wherein the step of indicating (46) an object type in association with each subarea (23'; 23'') comprises changing the appearance of the cursor (28).

9. (Amended) Method according to [one of the previous claims] claim 1, wherein the object types represent various physical items and are inserted into the working area to create said network.

11. (Amended) Computer-readable medium, on which is stored instructions for one or several general purpose computers (2), comprising means (15, 16, 18, 19) for enabling said one or said several computers (2) to perform the steps of the method according to [claim 1-10] claim 1.

METHOD FOR INSERTING OBJECTS INTO A WORKING AREA
IN A COMPUTER APPLICATION

Technical field

The present invention relates to a method for
facilitating the insertion of an object into a working
area on a computer display, said method being implemented
5 in a computer application software and comprising the
step of receiving input from the user selecting where on
the screen an object of a previously specified object
type is to be inserted.

10 Background art

In numerous computer applications, objects are
selected by a user and inserted into an area of a
computer display. This is especially frequent in
different kinds of programming and designing, where
15 objects belonging to several different object types are
available to the user for insertion into a working area,
such as a worksheet, a document, or any other limited
area of a screen, used by the active software application
to display objects. The user first clicks on a particular
20 type of object (e.g. a certain type of programming item)
and then clicks on the location where an object of the
particular type is desired.

In some applications a drag-and-drop procedure is
utilized, meaning that the user clicks on the object type
25 and without releasing the mouse button moves the cursor
to the desired location and then releases the button. An
object of the chosen type is hereby inserted at this
location. This functionality is implemented in e.g. Visio
from Visio Corp.

30 In other applications the cursor changes its
appearance when an object type is clicked on, to indicate
that an object will be inserted at the location of the

next click. This functionality is implemented in e.g. Corel Draw.

In some cases, objects of certain object types should only be inserted into specific parts of the working area, or in connection with objects of other predetermined object types. Particularly in certain types of programming, e.g. network PLC-programming, where the overall structure has to follow a predetermined pattern, this is a common situation. Inserting an object into a location where it is not ment to be located may result in a non-working object, or even in a non-working program, with tedious error searching as a result.

It is known in the art to implement test routines for each insertion, in order to avoid erroneous placement of objects. This can either be accomplished by making certain object types unavailable to the user unless certain predetermined conditions are met, or by refusing the insertion of a selected object into certain areas. However, the user then finds him/herself in a situation where the intended operation is impossible to perform, e.g. the object he/she intends to insert into a certain location is refused by the application. This is frustrating, especially as the user does not obtain information regarding why the object cannot be inserted, nor regarding what object can be inserted instead.

An even larger problem with known methods for inserting objects of different types into a working area is the fact that the cursor always needs to be moved between the icons or menus from which the object type is chosen, and the desired location.

Another problem is the icons or menus themselves. If menus are used, it can be difficult to quickly find the desired object type. Sometimes several sub-menus need to be opened in order to find a specific object type. If icons are used they normally provide a better overview, but instead they take up valuable space that is needed for other purposes.

Summary of the invention

A first object of the present invention is therefore to provide a method for inserting an object into a working area on a computer screen, that simplifies the
5 procedure.

A second object of the present invention is to provide a method for inserting an object into a working area on a computer screen, wherein the need for icons or
10 menus is eliminated.

A third object of the present invention is to provide a method for inserting an object into a working area on a computer screen, wherein the problem of attempting to make invalid insertions is avoided.

15 These objects are accomplished by using a method according to the preamble of claim 1, further characterized by the steps of indicating at least one subarea of the working area where an object is insertable, indicating an object type in association with
20 each subarea, an object of said object type being insertable into said subarea, receiving input from the user selecting one of said at least one subarea, and inserting into the selected subarea an object of the type that is indicated at the selected subarea.

25 This results in a simple procedure for inserting objects into the working area. Instead of having to first select an object type, and then to select a location, the user only has to make one selection. A software implementing the method according to the invention
30 indicates to the user locations where insertions are possible, and what type of object is insertable at each location. The input needed from the user to perform an insertion is thus reduced from two to one. According to the invention, one single piece of input is enough to
35 insert an object at a valid location in the working area.

Further, the need for menus and icons is eliminated, as the user is given clear indications of what objects

are insertable into the working area. There is no need to hide, or make unavailable, contents in a menu, as it is only available objects that are displayed.

The method according to the invention is preferably
5 used when restrictions are imposed on what objects can be inserted into the working area, and where they can be inserted. These restrictions can be caused for example by relationships between programming steps constituting a computer program, said steps being represented by the
10 objects, or by physical relationships between processes or physical entities, said processes or entities being represented by the objects.

The inventive method avoids the above mentioned problem of making invalid insertions. These insertions
15 can not even be attempted, as the user, even before the action to insert an object is performed, is made aware of what type of an object is insertable at a certain location.

A software implementing the method performs an
20 identification of all possible, valid insertions of objects into the working area and indicates them to the user. The user only has to decide which of the insertions to perform.

According to one embodiment of the invention, the
25 indication of said at least one subarea of the working area where an object is insertable includes graphically outlining said subarea.

According to another embodiment of the invention, the indication of said at least one subarea is
30 activatable and deactivatable by the user. This makes it possible for the user to examine the results of his /her work without the indications of subareas visible. When the user intends to insert a new object, the indication is simply activated by giving a certain input to the
35 software.

Input from the user is preferably received using a pointing device, preferably in electronic contact with

the software application and controlling a cursor on the display.

This makes it very easy for the user to provide input to the software application regarding where in the working area the user wishes to insert an object.

According to a further embodiment of the invention, the step of indicating at least one subarea of the working area where an object of a type that is insertable can be performed in response to the action of moving the cursor into said subarea.

In this way, the step of indicating a subarea is closely associated with the user activity of moving the mouse. No indications of subareas are displayed in the working area unless the user actually moves the cursor in the working area.

The step of indicating an object type in association with each subarea preferably comprises displaying a symbol representing said object type in connection to said subarea. According to one embodiment of the invention, this symbol is displayed by changing the appearance of the cursor, in response to the action of moving the cursor into said subarea.

One application of the method is in the field of network design. Hereinafter, the term "network" is used for any collection of objects, operations, events, processes, options, conditions etc. that logically relate to each other and form part of a system. Networks can appear in many contexts, for example organisation charts, circuit block diagrams or computer programs, and can be designed, or programmed, with the help of a computer in the above mentioned way by inserting objects of different types into a working area. Network programming is particularly useful when designing systems for automatic control, for example PLC-systems.

Normally, several different object types are available, where each type has specific physical properties. One object type can for example represent

physical events, while another might represent a conditional step, with several possible outcomes.

Brief description of the drawings

5 Preferred embodiments of the present invention, given by way of example only, will now be described in more detail, with reference to the accompanying drawings.

Fig 1 illustrates an environment in which the method according to the invention may be used.

10 Fig 2 is a schematic block diagram of a software application according to prior art.

Fig 3 is a schematic block diagram of a software application according to the present invention.

Fig 4 is an example of a working area on a display.

15 Fig 5 is a flowchart of a first embodiment of the method according to the invention.

Fig 6 is a flowchart of a second embodiment of the method according to the invention.

20 Fig 7 gives some examples of how indication of subareas and object types can appear in the working area 7 of the display.

Detailed description of preferred embodiments of the invention

25 Fig 1 illustrates an environment in which the method according to the invention can be utilized. A software application 1, e.g. a programming tool, is installed and running on a computer 2. A user 3 interacts with the application 1, giving instructions 9 to the software
30 application through a keyboard 4 and with a pointing means, preferably a mouse 5. The application presents the results of the user's actions on a display unit, preferably a monitor 6, displaying to the user a working area 7, where operations corresponding to said actions
35 are performed. Said operations may include inserting objects 8 into the working area 7, where they represent for example program actions or physical events.

Fig 2 shows a software application 1' according to prior art, suited for the insertion of objects into a working area. Said application 1' typically includes means 11 for receiving input from the user, means 12 for
5 deciding how to respond to the input from the user, and means 13 to insert objects into the working area 7.

Fig 3 shows a software application 1 according to the present invention. The software comprises identification means 15 for identifying valid insertions
10 of objects 8 into the working area 7. This means 15 is similar in structure to the means 12 in prior art, but with the important difference that it operates without waiting for user input. Instead of, as in prior art, controlling whether an insertion of an object requested
15 by the user is in fact a valid insertion, the means 15 are operative to constantly identify locations in the working area where objects 8 are insertable, and what type of object is insertable in every location. In short, the means 15 anticipate all possible insertions that can
20 be requested by the user, and identifies the ones that are valid.

Further, the application 1 is provided with indication means 16, for indicating information to the user on the monitor. Again, the structure of means 16 is
25 not in itself unique, and similar indication techniques can be found in many software applications. According to the invention, however, the indication means 16 use identification data 17, supplied by the identification means 15, to indicate all available, valid insertions to
30 the user in the present situation.

The software application 1 also comprises reception means 18 and insertion means 19, similar to the reception means 11 and the insertion means 13 of the prior art, respectively.

35 In the present context, the means 15, 16, 18, 19 are software routines included in the application 1. Of course, and as is well understood by a person skilled in

the art, in some cases one or several of these means 15, 16, 18, 19 can be comprised of separate software, or software associated with e.g. the monitor or mouse, said software operating together with the software application

5 1.

In the following description of the method according to the invention, said software application 1 is a program network design tool, a working area 7 of which is shown in fig 4. This type of programming is used for
10 example in PLC-programming.

In the illustrated example, the program network 20 comprises two types of items, namely step items 21, which represent one or several physical actions, and transition items 22, which define conditions for moving the program
15 control from one step item to another. Each item is represented by an object 21, 22 in the working area 7, and the relationship between the two types of items impose restrictions on how items can be inserted into the working area. For example, two step items cannot be
20 connected to each other without an intermediate transition item.

Reference numerals 23a, 23b, 23c, 23d indicate four of several subareas in the working area 7, where objects are insertable. The subareas are naturally located in
25 connection to the existing network, as this is where new objects can be inserted.

In the illustrated example, the subareas 23a, 23b, 23c, 23d are outlined by rectangles 25, which identify and limit each subarea. Of course, any indication using
30 graphics, colour or text is possible. Further, in the vicinity of each subarea 23a-d, an object type 26a-d is indicated. Again, in the illustrated example, the object type 26a-d associated with each subarea 23a-d respectively, is indicated by a symbol which represents
35 the associated object type 26a-d.

In the illustrated example, an inserted object normally includes an step item 21 and a transition item

22. Depending on where the object is inserted, however, the order of the two items vary. In subarea 23a, an object consisting of a transition item followed by an step item is insertable. This object type is represented
5 by the symbol 26a. In subarea 23b, the order is reversed, and this object type is represented by the symbol 26b.

Another possible object is a fork 24a, 24b, which indicates a division of the network path. A fork can be inserted before (23c) or after (23d) a transition, and
10 different symbols, 26c and 26d respectively, are associated with the two types of forks.

Fig 5 illustrates schematically a first embodiment of the method according to the invention. In step 30, the identification means 15 identifies subareas 23a, 23b of
15 the working area where objects are insertable. Further, in step 31, the identification means 15 identifies what type of object can be inserted in each subarea. As mentioned, following a step item there must be a transition item and vice versa.

20 When the identification of subareas and insertable object types is performed, the program control waits (in step 32) for the user to activate a grid 25, 26a-d. This activation can be accomplished by hitting a key on the keyboard 4 or by using the mouse. Reception means 18 are
25 arranged to receive and respond to such input by instructing the indication means 16 to activate the grid. The grid 25, 26a-d can take on any number of forms, but has the purpose of indicating a plurality of subareas in the working area 7 (step 33 in fig 5), and in association
30 with each subarea an object type (step 34 in fig 5). Both steps 33 and 34 are performed by the indication means 16, which have received identification data 17 from the identification means.

The program control now waits for the user to click
35 in one of the subareas (step 35), preferably using the mouse 5. Once a click in a subarea is detected by the reception means 18, the insertion means 19 inserts an

object of the indicated object type into the subarea. For example, if the user clicks in subarea 23a, an object of type 26a, consisting of a transition item and an step item is inserted into the subarea. Note that the user
5 accomplishes the entire insertion with just one click. As an insertable, valid object type is associated with each subarea, a selection of one of the subareas is sufficient for inserting an object.

This insertion affects the network, typically
10 extending it to include more items. The result of the insertion described above is the network 20' shown in fig 4b. The program control now instructs the identification means 15 to reidentify subareas and insertable object types (step 37 and 38). This results in an update of the grid in step 39 and 40, again using the indication means 16.

The program control then returns to step 35, and again waits for the user to click in a subarea, for the insertion of a new object. Of course, when the program
20 control waits at for example step 35, the user can choose to deactivate the grid or to perform other actions in the application, such as provide an item with additional data, define parameters etc.

Another embodiment of the method according to the
25 invention is showed in fig 6. Just as in fig 5, the first two steps 42, 43 identify subareas and insertable object types. Then, however, the program control waits for the user to move the mouse cursor into one of the subareas before (step 44). When the reception means 18 receive
30 information of this situation, the indication means 16 are instructed to indicate this particular subarea (step 45) and the object type that is insertible into this subarea (step 46).

This indication technique is illustrated in fig 4b
35 and 4c, where the cursor 28 is located in a subarea 23', 23'', resulting in the indication of the subarea and

object type with a rectangle 25', 25'' and a symbol 26', 26''.

The program control then waits for a user action (step 47). If the user moves the mouse cursor out of the subarea (move), the indications of subarea and insertable object type are removed (step 48) and program control returns to step 44.

If the user does not move the cursor, but instead clicks in said subarea (click) an object is inserted into the subarea (step 49). This insertion affects the network, typically extending it to include more items. Therefore, the program control now instructs the identification means 15 to reidentify subareas and insertable object types (step 50 and 51), before returning to step 44.

Of course, it is possible, and even advantageous, to implement a combination of the two embodiments described above. For example, a grid including only the rectangles 25 can be activated and deactivated, and at the same time the mouse cursor appearance changes to indicate what type of object is insertable into a subarea.

In some cases, for example when a fork 24a, 24b is inserted into the working area 7, it can be necessary to indicate a second location 27a, 27b, namely where the fork rejoins with the main path of the network. When this is the case, the insertion of an object 36, 49 is followed by a program step 52, 53 waiting for additional user input.

If, in one subarea, objects of different object types are insertable, this can be indicated by dividing the rectangle 25 into several smaller fields, each with an object type indicated in its vicinity. Alternatively, a list or table can be displayed beside the subarea, indicating different insertable objects.

Another solution is to indicate one object type when the cursor is moved into the subarea. Then, when the user presses the mouse button, alternative object types are

indicated. The user can then move the cursor to the desired object type, and release the button in this location, resulting in an insertion of an object of this type. Note that the user still only makes one click with the mouse, although a cursor move is possibly made between the press and release actions.

Another solution, preferred by the applicant, is to indicate several subareas of the standard size, next to each other, each one with one associated object type. This is illustrated in fig 4a, where objects 26a/26c and 26b/26d are insertable at the same location. When the user selects one of the subareas 23a/23c, 23b/23d, an object of the type indicated in that particular subarea is inserted, and the surrounding subareas are hidden or moved in the update following the insertion.

Many variations of the method according to the present invention are possible to a person skilled in the art. The appearance of the indications can, for example, be changed without losing the functionality intended in the claims.

Article 34

NEW CLAIMS

1. Method for fascilitating the insertion of an
object into a working area (7) on a computer display (6)
5 said method being performed by a computer application
software (1) for creating a logical network and
comprising the step of receiving input (9) from the user
(3) selecting where on the screen an object of a
previously specified object type is to be inserted,
10 c h a r a c t e r i z e d by the steps of
identifying (30; 42) at least one subarea (23a-d;
23'; 23'') of the working area (7) where an object is
insertable,
identifying (31; 43) what type of object can be
15 insertable in said subarea,
indicating (33; 45) said at least one subarea,
indicating (34; 46) said object type (26a-d; 26';
26'') in association with each subarea (23a-d; 23';
23''),
20 receiving input (35; 47) from the user selecting one
of said at least one subarea, and
inserting (36; 49) into the selected subarea an
object of the type that is indicated in association with
the selected subarea.
25
2. Method according to claim 1, wherein the step of
indicating (33; 45) at least one subarea of the working
area where an object is insertable comprises graphically
outlining said at least one subarea.
30
3. Method according to claim 1 or 2, wherein the
indication (33) of said at least one subarea is
activatable and deactivatable by the user (3).
- 35 4. Method according to claim 1-3, wherein input (9)
from the user is received using a pointing device (5).

ARTICLE 34

5. Method according to claim 4, wherein the pointing device (5) is in electronic contact with the computer application (1) and controls a cursor (28) on the display (6).

5

6. Method according to claim 4 or 5, wherein the step of indicating (45) at least one subarea (23'; 23'') of the working area where an object of a type that is insertable comprises graphically outlining said subarea when the cursor (28) is moved into said subarea.

10

7. Method according to claim 4 - 6, wherein the step of indicating (34; 46) an object type in association with each subarea comprises displaying a symbol (26a-d) representing said object type in connection to said subarea.

15

8. Method according to claim 5 - 7, wherein the step of indicating (46) an object type in association with each subarea (23'; 23'') comprises changing the appearance of the cursor (28).

20

9. Method according to one of the previous claims, wherein the object types represent various physical items that are inserted into the working area to create said network.

25

10. Method according to claim 9, wherein the network represents a system for automation.

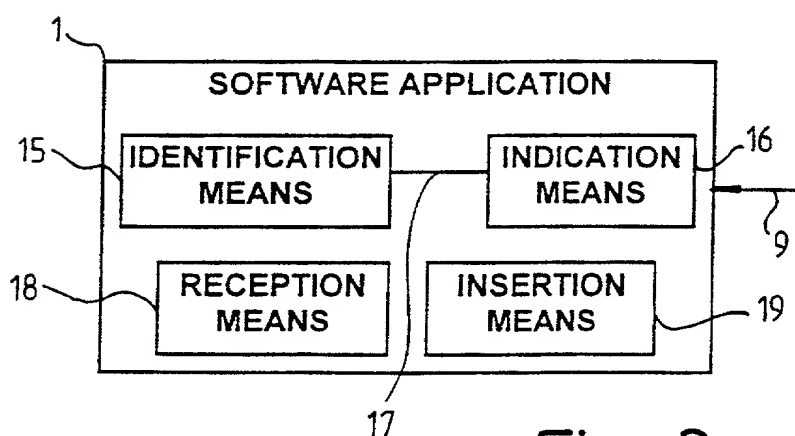
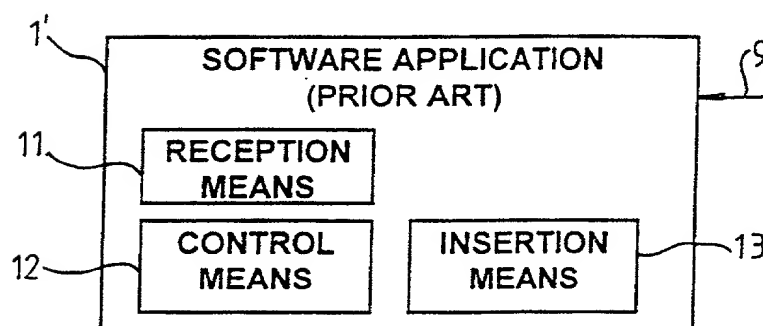
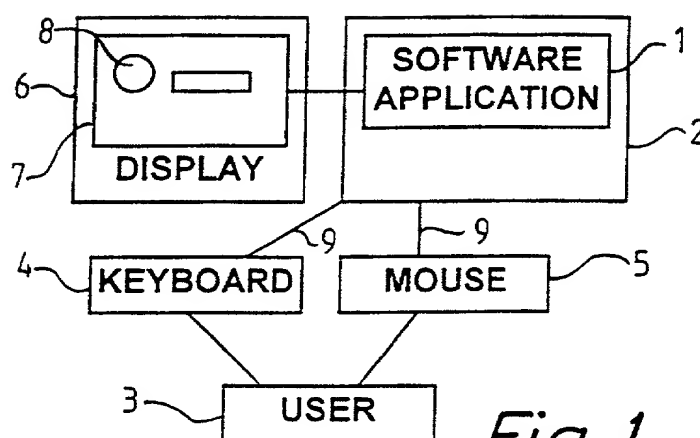
30

11. Computer-readable medium, on which is stored instructions for one or several general purpose computers (2), comprising means (15, 16, 18, 19) for enabling said one or said several computers (2) to perform the steps of the method according to claim 1 - 10.

35

AMENDED SHEET

091856972



091856972

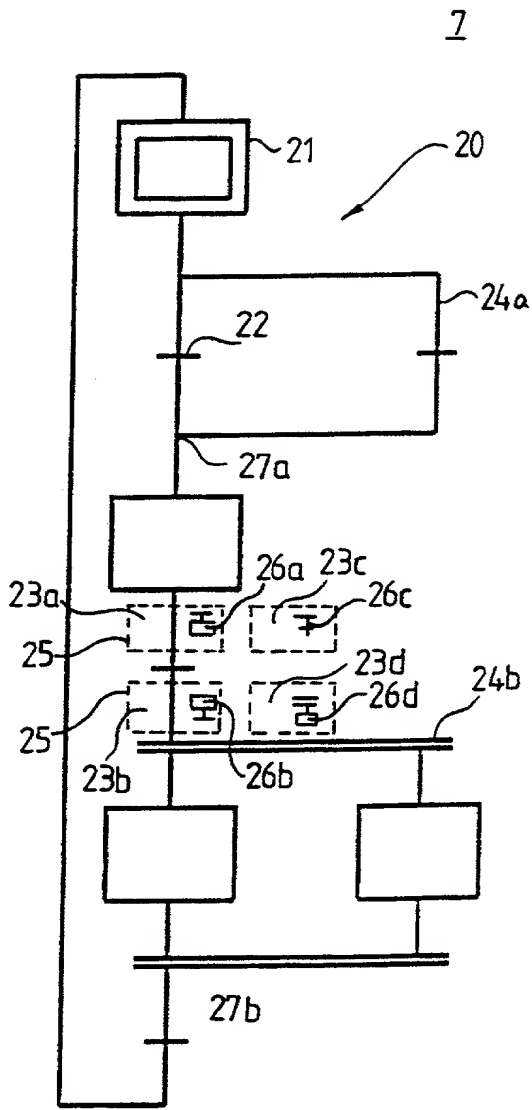


Fig. 4a

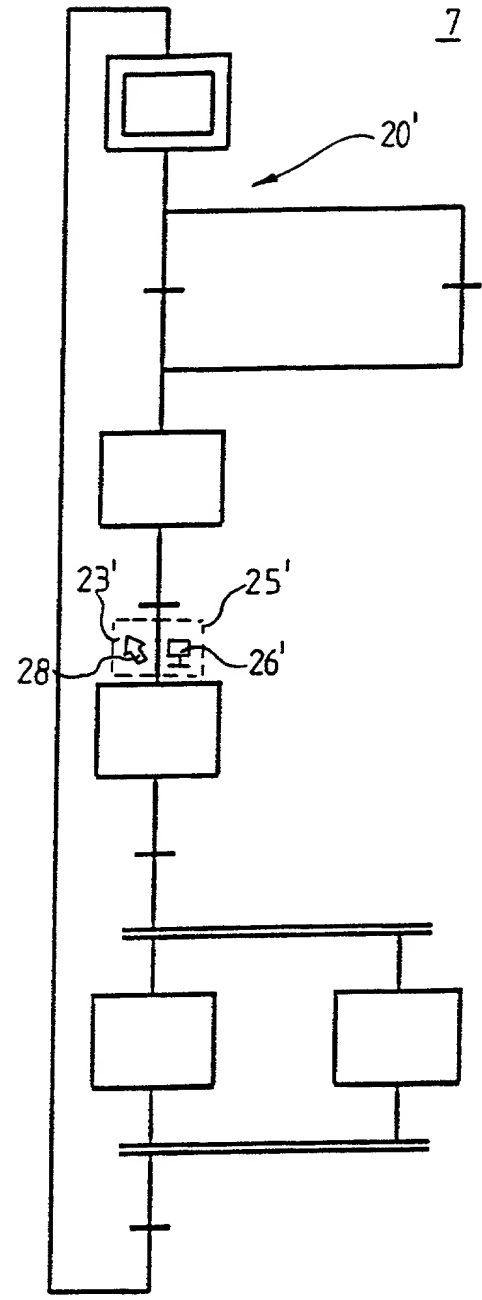
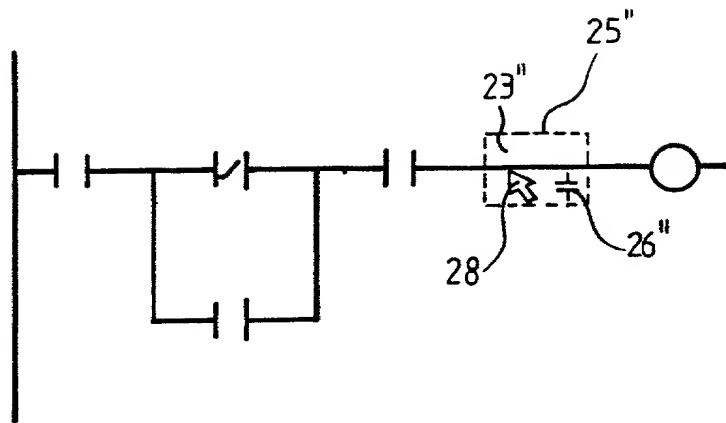
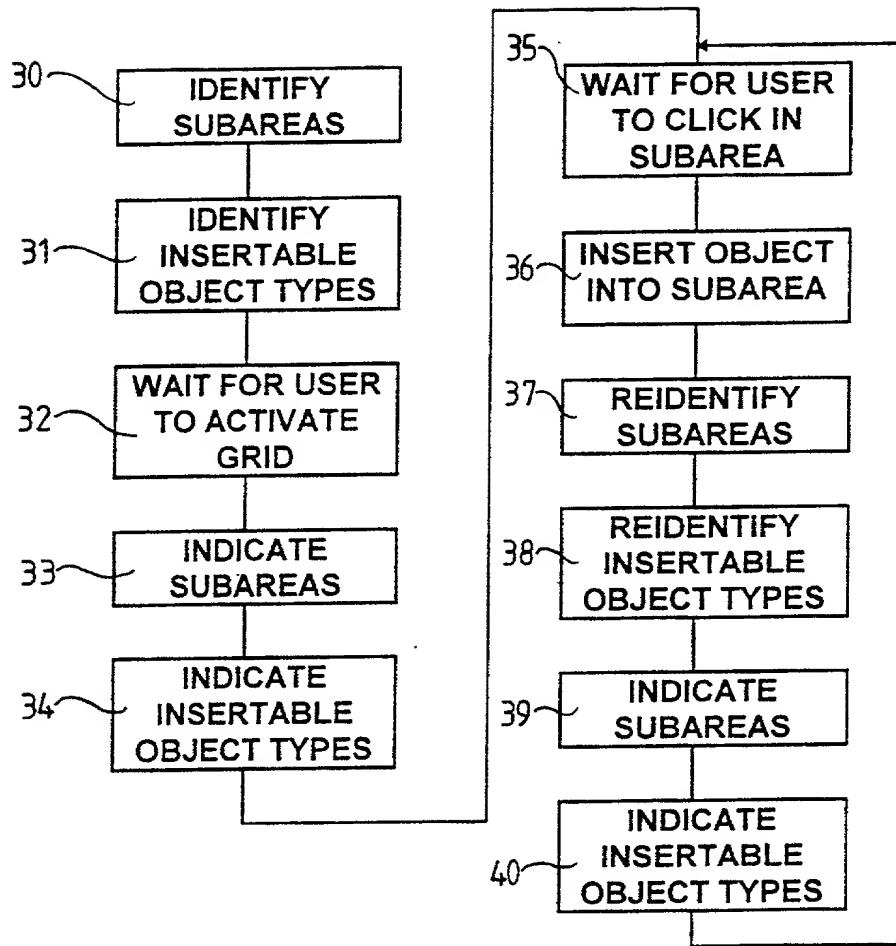


Fig. 4b

*Fig. 4c*

*Fig. 5*

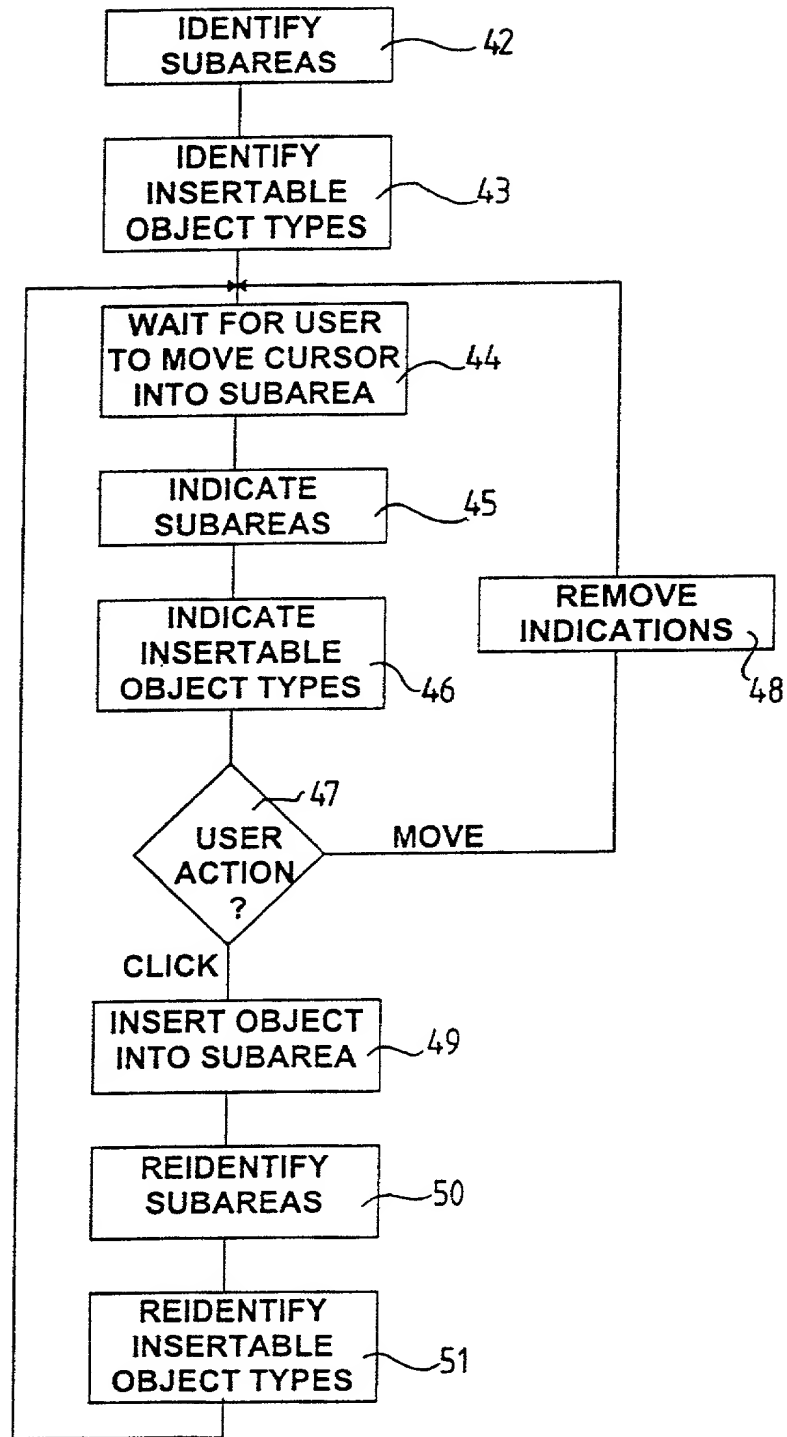


Fig. 6

Attorney Docket No. 0104-0345P

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Telephone: (703) 205-8000 • Facsimile: (703) 205-8050PLEASE NOTE:
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FOR PATENT AND DESIGN APPLICATIONS**

As a below named inventor, I hereby declare that: my residence, post office address and citizenship are as stated next to my name; that I verily believe that I am the original, first and sole inventor (if only one inventor is named below) or an original, first and joint inventor (if plural inventors are named below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

Insert Title:

METHOD FOR INSERTING OBJECTS INTO A WORKING AREA IN A COMPUTER APPLICATIONFill in Appropriate
Information -
For Use Without
Specification
Attached:

the specification of which is attached hereto. If not attached hereto,

the specification was filed on _____ as
United States Application Number _____
and amended on _____ (if applicable) and/or
the specification was filed on 30 November 1998 as PCT
International Application Number PCT/SE98/02183; and was
amended under PCT Article 19 on _____ (if applicable)

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to patentability as defined in Title 37, Code of Federal Regulations, §1.56.

I do not know and do not believe the same was ever known or used in the United States of America before my or our invention thereof, or patented or described in any printed publication in any country before my or our invention thereof or more than one year prior to this application, that the same was not in public use or on sale in the United States of America more than one year prior to this application, that the invention has not been patented or made the subject of an inventor's certificate issued before the date of this application in any country foreign to the United States of America on an application filed by me or my legal representative or assigns more than twelve months (six months for designs) prior to this application, and that no application for patent or inventor's certificate on this invention has been filed in any country foreign to the United States of America prior to this application by me or my legal representatives or assigns, except as follows.

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Prior Foreign Application(s)**Priority Claimed**Insert Priority
Information:
(if appropriate)

(Number)	(Country)	(Month/Day/Year Filed)	<input type="checkbox"/> Yes	<input type="checkbox"/> No
_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>
_____	_____	_____	<input type="checkbox"/>	<input type="checkbox"/>

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Insert Provisional
Application(s):
(if any)

(Application Number)	(Filing Date)
_____	_____
_____	_____

All Foreign Applications, if any, for any Patent or Inventor's Certificate Filed More than 12 Months (6 Months for Designs) Prior to the Filing Date of This Application:

Country	Application Number	Date of Filing (Month/Day/Year)
_____	_____	_____
_____	_____	_____

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I hereby claim the benefit under Title 35, United States Code, §120 of any United States and/or PCT application(s) listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States and/or PCT application in the manner provided by the first paragraph of Title 35, United States Code, §112, I acknowledge the duty to disclose information which is material to the patentability as defined in Title 37, Code of Federal Regulations, §1.56 which became available between the filing date of the prior application and the national or PCT international filing date of this application.

Insert Prior U.S.
Application(s):
(if any)

(Application Number)	(Filing Date)	(Status - patented, pending, abandoned)
_____	_____	_____
_____	_____	_____

Attorney Docket No.

I hereby appoint the following attorneys to prosecute this application and/or an international application based on this application and to transact all business in the Patent and Trademark Office connected therewith and in connection with the resulting patent based on instructions received from the entity who first sent the application papers to the attorneys identified below, unless the inventor(s) or assignee provides said attorneys with a written notice to the contrary;

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Inventor, if any
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I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

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